

# PATENT COOPERATION TREATY

## PCT

### INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY (Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44bis)

Applicant's or agent's file reference <b>P TM81204 PC-LS</b>	<b>FOR FURTHER ACTION</b>		See item 4 below
International application No. <b>PCT/DE2005/000070</b>	International filing date ( <i>day/month/year</i> ) <b>20 January 2005 (20.01.2005)</b>	Priority date ( <i>day/month/year</i> ) <b>04 February 2004 (04.02.2004)</b>	
International Patent Classification (8th edition unless older edition indicated) See relevant information in Form PCT/ISA/237			
Applicant <b>CONTI TEMIC MICROELECTRONIC GMBH</b>			

- |    |   |              |   |
|----|---|--------------|---|
| 1. | This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 bis.1(a).   |              |   |
| 2. | This REPORT consists of a total of 9 sheets, including this cover sheet.<br><br>In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead. |              |   |
| 3. | This report contains indications relating to the following items:   |              |   |
|    | <input checked="" type="checkbox"/>   | Box N°. I    | Basis of the report   |
|    | <input checked="" type="checkbox"/>   | Box No. II   | Priority  |
|    | <input type="checkbox"/>  | Box No. III  | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability  |
|    | <input type="checkbox"/>  | Box No. IV   | Lack of unity of invention  |
|    | <input checked="" type="checkbox"/>   | Box No. V    | Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |
|    | <input checked="" type="checkbox"/>   | Box No. VI   | Certain documents cited   |
|    | <input type="checkbox"/>  | Box No. VII  | Certain defects in the international application  |
|    | <input type="checkbox"/>  | Box No. VIII | Certain observations on the international application   |
| 4. | The International Bureau will communicate this report to designated Offices in accordance with Rules 44bis.3(c) and 93bis.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44bis .2).          |              |   |

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland	Date of issuance of this report <b>03 October 2006 (03.10.2006)</b>
Facsimile No. +41 22 338 82 70	Authorized officer <b>Agnes Wittmann-Regis</b> e-mail: pt06@wipo.int

**PATENT COOPERATION TREATY**

From the  
INTERNATIONAL SEARCHING AUTHORITY

To:

**PCT**

**TRANSLATION**

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

(PCT Rule 43bis.1)

		Date of mailing (day/month/year) <b>See form PCT/ISA/210</b>
Applicant's or agent's file reference <b>P TM81204 PC-LS</b>		FOR FURTHER ACTION See paragraph 2 below
International application No. <b>PCT/DE2005/000070</b>	International filing date (day/month/year) <b>20.01.2005</b>	Priority date (day/month/year) <b>04.02.2004</b>
International Patent Classification (IPC) or both national classification and IPC <b>F02D41/14</b>		
Applicant <b>CONTI TEMIC MICROELECTRONIC GMBH</b>		

**1. This opinion contains indications relating to the following items:**

- |                                     |  |
|-------------------------------------|--|
| <input checked="" type="checkbox"/> | Box No. I      Basis of the opinion  |
| <input checked="" type="checkbox"/> | Box No. II     Priority  |
| <input type="checkbox"/>            | Box No. III    Non-establishment of opinion with regard to novelty, inventive step and industrial applicability  |
| <input type="checkbox"/>            | Box No. IV    Lack of unity of invention   |
| <input checked="" type="checkbox"/> | Box No. V     Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |
| <input checked="" type="checkbox"/> | Box No. VI    Certain documents cited  |
| <input type="checkbox"/>            | Box No. VII   Certain defects in the international application   |
| <input type="checkbox"/>            | Box No. VIII   Certain observations on the international application   |

**2. FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

**3. For further details, see notes to Form PCT/ISA/220.**

Name and mailing address of the ISA/EP	Authorized officer
Facsimile No.	Telephone No.

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Box No. I Basis of this opinion

1. With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.  
 This opinion has been established on the basis of a translation from the original language into the following language \_\_\_\_\_, which is the language of a translation furnished for the purposes of international search (under Rule 12.3 and 23.1(b)).
2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
  - a. type of material
    - a sequence listing
    - table(s) related to the sequence listing
  - b. format of material
    - in written format
    - in computer readable form
  - c. time of filing/furnishing
    - contained in the international application as filed.
    - filed together with the international application in computer readable form.
    - furnished subsequently to this Authority for the purposes of search.
3.  In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

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Box No. II Priority

1.  The following document has not yet been furnished:
  - copy of the earlier application whose priority has been claimed (Rule 43bis.1 and 66.7(a)).
  - translation of the earlier application whose priority has been claimed (Rule 43bis.1 and 66.7(b)).

Consequently it has not been possible to consider the validity of the priority claim. This opinion has nevertheless been established on the assumption that the relevant date is the claimed priority date.
2.  This opinion has been established as if no priority had been claimed due to the fact that the priority claim has been found invalid (Rules 43bis.1 and 64.1). Thus for the purposes of this opinion, the international filing date indicated above is considered to be the relevant date.
3. Additional observations, if necessary:

The validity of the priority claim has not been considered because the International Searching Authority does not have in its possession a copy of the earlier application whose priority has been claimed or, where required, a translation of that earlier application. This opinion has nevertheless been established on the assumption that the relevant date (Rules 43bis1 and 64.1) is the claimed priority date.

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Box No. V	<b>Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</b>
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**1. Statement**

Novelty (N)	Claims <u>1-10</u>	YES
	Claims _____	NO
Inventive step (IS)	Claims _____	YES
	Claims <u>1-10</u>	NO
Industrial applicability (IA)	Claims <u>1-10</u>	YES
	Claims _____	NO

**2. Citations and explanations:**

Reference is made to the following document:

D1: US-A-5 239 473 (RIBBENS ET AL.) 24 August 1993  
(1993-08-24)

**1 Clarity**

1.1 Claim 1 contains a large number of clarity problems and therefore does not meet the requirements of PCT Article 6. The clarity problems are briefly listed below:

- the feature "the beginning of operation of an internal combustion engine" in claim 1, which is generally understood as meaning the starting of an internal combustion engine, is not mentioned at any point in the description and results in a lack of clarity.
- The terms "cylinder frequency signal" and "angular frequency range" do not have a generally clear meaning, with the result that the reader is unclear as to the scope of protection claimed.
- The subject matter is defined in terms of the result to be achieved, but in so doing merely states the problem to be solved without providing the

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technical features needed to achieve this result.

The task of implementing the following functional statements in practice is not common general knowledge of a person skilled in the art and the following are thus not clear:

- "extracting" the segment signal (see line 8)
- "generating" the cylinder signal (see line 13)
- "converting" it into a cylinder frequency signal (see lines 15, 16)
- "extracting" the signal information that contains the beginning of combustion (see line 20)

## **2 Feasibility**

2.1 The terms "cylinder frequency signal", "angular frequency range" and the measures of "extracting", "generating" and "converting" which have already been mentioned in paragraph 1.1 have not been disclosed in the application to such a sufficient extent that a person skilled in the art could implement them. Therefore, claim 1 does not meet the requirements of PCT Article 5 either.

## **3 Inventive step**

3.1 The present application does not meet the requirements of PCT Article 33(1) because the subject matter of claim 1 does not involve an inventive step within the meaning of PCT Article 33(3). On account of the scope for interpretation

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resulting from the lack of clarity (discussed above) of the key term "beginning of combustion" and the lack of details on generating the individual signals, there are a large number of documents on the basis of which a person skilled in the art would arrive at the same solution as in claim 1 by using conventional design measures.

3.2 D1 describes, for example, a method for calculating the generated cylinder-specific moments from the crankshaft position signal. To this end, the crankshaft position signal is converted into a frequency signal and is evaluated. The signal which has been calculated in this manner also contains the information regarding the beginning of combustion.

**4 Dependent claims**

4.1 Dependent claims 2 to 10 do not contain any features which, in combination with the features of any claim to which they refer, meet the PCT requirements for novelty and inventive step, see the corresponding passages cited in the search report.

4.2 In addition, claims 3 and 7 are unclear. It is not obvious why adjustment of a cylinder results in a change in the segment signal and what is to be understood by the phrase "largely eliminating sensor wheel errors".

4.3 Finally, the formulations which are contained in claims 2, 7, 8, 9 and are each introduced using the

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citations and explanations supporting such statement

words "more particularly" are not restrictive and  
are therefore not taken into account.

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Box No. VI	Certain documents cited			
1. Certain published documents (Rule 43bis.1 and 70.10)				
Application No. Patent No.	Publication date (day/month/year)	Filing date (day/month/year)	Priority date (valid claim) (day/month/year)	
DE 102 35 665 A1 was published within the priority period of the present application.				
2. Non-written disclosures (Rule 43bis.1 and 70.9)				
Kind of non-written disclosure	Date of non-written disclosure (day/month/year)	Date of written disclosure referring to non-written disclosure (day/month/year)		

See form 210